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THE ORGANIC CHEM LAB SURVIVAL MANUAL

A STUDENT'S GUIDE TO TECHNIQUES

THIRD EDITION

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John Wiley & Sons, Inc.

New York Chichester Brisbane Toronto Singapore

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This book was set in New Century Schoolbook by Digital Production and printed and bound by Courier Stoughton. The cover was printed by Phoenix.

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Library of Congress Cataloging-in-Publication Data

Zubrick, James W.

The organic chem lab survival manual: a student's guide to techniques / James W. Zubrick.--3rd ed.

Includes index.

ISBN 0-471-57504-6

1. Chemistry, Organic--Laboratory manuals. I. Title.

QD261.Z83 1992

547'.0078--0078

92-24585

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Printed in the United States of America

10 9 8

To Cindy

PREFACE TO THE THIRD EDITION

It is heartening to hear of your book being read and enjoyed, literally cover to cover, by individuals ranging from talented high-school science students to Professors Emeritus of the English language. Even better to hear that you have a chance to improve that book, based upon the above comments, comments by reviewers, and the experience gained from working with the text.

The goal of this edition is, as it has been from the first edition, to present the basic techniques in the organic chemistry laboratory with the emphasis on doing the work correctly the first time. As always, I have relied on the unfailingly thoughtful and helpful comments of users to guide me in deciding what changes needed to be made for this third edition.

The most notable additions are sections detailing the use of microscale equipment, something that is becoming the scale of choice, and includes: the conical vial and its handling; the O-ring-seal cap; gas collection apparatus; Pasteur pipet tips such as filtering, extraction, and washing; handling syringes and needles; the rubber septum; Craig tube recrystallization; analytical balance technique for the organic laboratory; and Hickman still distillations. In addition, readers will find short new sections on the

operation of the FTIR, and waste disposal. Numerous other sections have been revised based on the editorial comments of reviewers.

Many people deserve credit for their assistance in producing this edition: I would also like to thank

William Dailey
University of Pennsylvania
Rudolph Goetz
Michigan State University
Marco Pagnotta
Barnard College
Kathleen Petersen
University of Notre Dame
Frederick Heldrich
College of Charleston

for their valuable comments and suggestions in making this edition more useful for students of organic chemistry laboratory.

Finally, I'd like to thank Ms. Nedah Rose, Chemistry Editor at John Wiley & Sons, Inc., especially for her help in the determination of what should be what with this edition, and Ms. Karen Kosztolnyik, editorial assistant, for help in keeping information, that tended to get away from me, straight. Ms. Sandra Russell, Senior Production Supervisor, Ms. Elizabeth Swain, Senior Copyeditor, and Ms. Madelyn Lesure, Design Director deserve a great deal of credit for helping to put this third edition together in such a professional manner.

J.W. Zubrick
Hudson Valley Community College
June 10, 1992

SOME NOTES ON STYLE

It is common to find instructors railing against poor usage and complaining that their students cannot do as much as to write one clear, uncomplicated, communicative English sentence. Rightly so. Yet I am astonished that the same people feel comfortable with the long and awkward passive voice, the pompous “we” and the clumsy “one,” and that damnable “the student,” to whom exercises are left as proofs. These constructions, which appear in virtually all scientific texts, do *not* produce clear, uncomplicated, communicative English sentences. And students do learn to write, in part, by following example.

I do not go out of my way to boldly split infinitives, nor do I actively seek prepositions to end sentences with. Yet by these constructions alone, I may be viewed by some as aiding the decline in students’ ability to communicate.

E.B. White, in the second edition of *The Elements of Style* (Macmillan, New York, 1972, p. 70), writes

Years ago, students were warned not to end a sentence with a preposition; time, of course, has softened that rigid decree. Not only is the preposition acceptable at the end, sometimes it is more effective in that

spot than anywhere else. "A claw hammer, not an axe, was the tool he murdered her with." This is preferable to "A claw hammer, not an ax, was the tool with which he murdered her."

Some infinitives seem to improve on being split, just as a stick of round stovewood does. "I cannot bring myself to really like the fellow." The sentence is relaxed, the meaning is clear, the violation is harmless and scarcely perceptible. Put the other way, the sentence becomes stiff, needlessly formal. A matter of ear.

We should all write as poorly as White.

With the aid of William Strunk and E.B. White in *The Elements of Style* and that of William Zinsser in *On Writing Well*, Rudolph Flesch in *The ABC of Style*, I have tried to follow some principles of technical communication lately ignored in scientific texts: use the first person, put yourself in the reader's place, and, the best for last, use the active voice and a personal subject.

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